



Quick Reference Guide

SELLING ITANIUM™-BASED ENTERPRISE SOLUTIONS

The Intel® Itanium™ architecture extends IA into the most demanding high-end enterprise and technical computing environments, delivering new levels of availability, scalability and performance.



The Intel® Itanium™ processor family extends the open computing model to high-end enterprise environments, delivering greater choice and superior price/performance over proprietary RISC-based solutions.

Broad industry commitment combined with IA-32 instruction binary compatibility in hardware provides increased investment protection.

Performance

- EPIC technology maximizes parallelism and hardware/software synergy, enabling multiple operations to execute simultaneously
- Advanced floating-point architecture for compute-intensive applications, 6.4 GFLOPS maximum
- Breakthrough performance on security algorithms for secure e-commerce transactions

Scalability

- Improved system bus performance and efficiency through enhanced deferred transaction bus
- Broad range of SMP systems: 2-way to 512-way
- 64-bit addressing for superior memory scaling, delivering higher throughput for more users/data
- Resources to manage large data sets and high-volume workloads: 17 execution units, up to 4MB of cache, 256 on-die registers

High Availability

- Extensive ECC coverage on critical data paths
- Enhanced Machine Check Architecture (MCA)
- Integrated Architecture RAS built into all levels of the platform: processor, chipset, firmware and OS

Comparison	Itanium™ Processor	Ultra Sparc III
OS-supported	4	1
System vendor choice	>14	-3
Available platforms	>30	-2
PERFORMANCE AND SCALABILITY		
Transaction performance	x	
Lower cost (\$) per transaction	x	
SPEC2000 benchmarks performance		
Integer		x
Floating point	x	
RSA 1024-bit security algorithm	x	
EPIC technology	x	
Maximum processors in system	512	64
RELIABILITY, AVAILABILITY, SERVICEABILITY (RAS)		
ECC on FSB and caches, parity checking	x	x
Enhanced MCA	x	
Server management features	x	x
I/O hot-swap	x	x
Integrated architecture RAS	x	

ADDRESSIBILITY, 64-BIT: Enables higher performance for large applications (especially for systems with >4GB of memory)

64-BIT INTEGER AND 82-BIT FP ARITHMETIC: Provides higher performance and superior precision for compute-intensive tasks

EPIC: Explicitly Parallel Instruction Computing improves performance through hardware and software synergy and uses advanced techniques such as predication and speculation

ECC: Error Correction Code maintains integrity of mission-critical data in caches and on system bus, improving availability, reliability

MCA: Enhanced Machine Check Architecture provides advanced error detection, recovery and containment, improving uptime

PARALLELISM: Delivers higher performance and scalability by executing multiple operations simultaneously

PREDICATION: EPIC technology that removes delays caused by branches, improving performance

REGISTER RESOURCES: 128 FP registers and 128 Integer registers

REGISTER MODEL: Rotating register model improves software pipelining, increases loop performance and reduces overhead in call/return sequences in software

SPECULATION: EPIC technology that reduces impact of memory latency by speculatively executing data access instructions

SCALE-UP TREND: Supports growing business needs by consolidating applications and data on larger, more powerful Intel® Itanium™ class platforms

THE OPPORTUNITY

Target Customer

- Fortune 500 accounts and leading xSPs
- Customers needing scale up
- Replacements for proprietary RISC platforms
- Early technology adopters and innovators

Target Environment

- Data centers requiring scalability and superior RAS
- Massive databases or dataset applications requiring large memory addressability
- High-performance technical computing (HPC)
- Security-intensive transaction engines
- Complex computational/floating point intensive workloads
- High end server and workstation infrastructure

Target Application Segments

- High-end technical servers and workstation (DCC, EDA, MDA, Finance, SWE, Sci)
- Enterprise computing (large databases, In-Memory databases, Business Intelligence, ERP/SCM/CRM)

Tactics

- Understand customer business need and match with available Intel® Itanium™ solution choices, target application segments
- Highlight benefits of open computing model vs. proprietary platform model
- Focus on price/performance benefits over RISC
- Highlight benefits of scaling up with an architecture designed to grow with the business
- Sell long-term commitment to Itanium processor family and enterprise computing

Benefits Beyond MHz

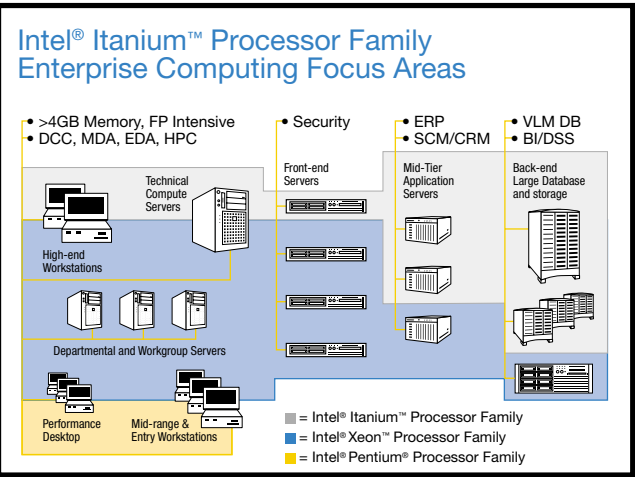
- Itanium processor combines high availability and scalability features providing the optimum enterprise solution for enterprise servers and high-end workstations
- EPIC architecture and Itanium processor resources achieve new levels of performance through parallelism, executing more instructions per clock than traditional architectures while delivering higher performance for the most demanding workloads

IA 2001 ENTERPRISE POSITIONING

INTEL® ITANIUM™ PROCESSOR FAMILY: Extends IA for the most demanding enterprise requirements of high-end servers and workstations

INTEL® XEON™ PROCESSOR FAMILY: Continues price/performance leadership for entry, mid-range and high-end servers and workstations

INTEL® PENTIUM® 4 PROCESSOR: Intel's highest performance processor for desktop PCs and single-processor entry workstations



INDUSTRY COMMITMENT TO INTEL® ITANIUM™ PROCESSOR

OEMS: Bull, Compaq, Dell, FSC, Fujitsu, HP, Hitachi, IBM, NEC, Mitsubishi, SGI, Toshiba and Unisys

SYSTEM BREADTH: High-end 2P workstations and enterprise servers ranging from 2-way to 512-way

OSV SUPPORT: 64-bit Windows*, AIX* 5L, Linux64-bit*, and HP-UX* 11i

ISV SUPPORT: Over 400 applications being ported

• Server application vendors such as Ariba, Baan, BEA Weblogic, IBM, i2, Informix, Intershop, Microsoft, Oracle, PeopleSoft, SAP, SAS, TimesTen, VERITAS and others

• Workstation application vendors such as Alias|Wavefront, ANSYS, Avid/Softlimage, Cadence, Dassault Systemes, Discreet, Fluent, Mentor Graphics, MSC.Software, PTC, RiskMetrics, Synopsys and others

Value Propositions for CEO/LOB Manager

The success of tomorrow's competitive enterprises depends on the ability to quickly adapt to new business processes through new technologies.

- Intel®-based enterprise platforms enable the broadest system choice for tomorrow's breakthrough applications
- Itanium™-based systems provide highly scalable solutions to support growing business needs

Value Propositions for CIOs/CTOs

Intel-based enterprise platforms enable a common infrastructure, delivering greater choice, scalability and lower TCO.

- Itanium platforms provide choice of leading systems vendors, enterprise-class operating systems and hundreds of enterprise and technical applications
- Itanium systems scale from 2-way to 512-way
- Itanium platforms bring traditional Intel architecture price/performance leadership to high-end enterprise environment

Value Propositions for IT Managers

Itanium platforms deliver choice, scalability, availability and performance for enterprise and technical computing applications, such as large databases, business intelligence, ERP/SCM/CRM, computer-aided design, technical computing and digital media.

- Itanium systems deliver scalability through large memory support, high SMP configurations and high bandwidth
- Itanium systems deliver high availability through enhanced error correction, error management and serviceability features
- Itanium systems deliver superior transaction processing performance for data center applications and world-class floating point performance for technical computing apps

For more information:
<http://www.developer.intel.com>
<http://intel.com/eBusiness/products/ia64/overview>

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